

**WHAT IS CLAIMED IS:**

1. A method comprising:  
receiving a packet, the packet comprising a multicast destination address; and  
sending a copy of the packet to a virtual network device sub-unit via a virtual network device link.
  
2. The method of claim 1, wherein the sending comprises:  
sending at most one copy of the packet via the virtual network device link.
  
3. The method of claim 2, further comprising:  
receiving a second packet via the virtual network device link, the second packet comprising a second multicast destination address; and  
replicating the second packet for each of a plurality of outgoing VLANs (Virtual Local Area Networks) associated with the second multicast destination address.
  
4. The method of claim 3, further comprising:  
sending at least one copy of the second packet to each line card that includes an interface associated with one of the outgoing VLANs.
  
5. The method of claim 3, further comprising:  
sending at least one copy of the second packet to each line card that includes an interface associated with an incoming VLAN, wherein  
the second packet is being conveyed in the incoming VLAN.
  
6. The method of claim 3, further comprising:  
sending at most one copy of the second packet to each line card that includes an interface associated with one of the outgoing VLANs.
  
7. The method of claim 3, further comprising:  
not sending any copy of the second packet via an uplink interface coupled to a virtual network device bundle.

8. The method of claim 2, further comprising:  
receiving a third packet via the virtual network device link, the third packet  
comprising a unicast destination address; and  
performing an egress lookup for the third packet in response to the receiving the third  
packet.
9. The method of claim 8, wherein  
a header associated with the third packet is also received via the virtual network  
device link,  
the header comprises a destination identifier.
10. The method of claim 9, further comprising:  
sending the third packet and the header to another line card if a non-primary entry  
corresponding to the unicast destination address is found during the egress  
lookup.
11. The method of claim 9, further comprising:  
if a primary entry corresponding to the unicast destination address is found during the  
egress lookup:  
sending the third packet from an interface identified by the primary entry.
12. The method of claim 11, further comprising:  
sending a notification via the virtual network device link if the destination identifier  
comprised in the header does not match a destination identifier comprised in  
the primary entry, wherein  
the notification identifies the unicast destination address as corresponding to  
the destination identifier comprised in the primary entry.
13. A method, comprising:  
receiving a packet via a virtual network device link, the packet comprising a unicast  
destination address; and  
performing an egress lookup for the packet in response to the receiving the packet.

14. The method of claim 13, wherein  
a header associated with the packet is also received via the virtual network device  
link,  
the header comprises a destination identifier.
15. The method of claim 14, further comprising:  
sending the packet and the header to another line card if a non-primary entry  
corresponding to the unicast destination address is found during the egress  
lookup.
16. The method of claim 14, further comprising:  
if a primary entry corresponding to the unicast destination address is found during the  
egress lookup:  
sending the packet from an interface identified by the primary entry.
17. The method of claim 16, further comprising:  
sending a notification via the virtual network device link if the destination identifier  
comprised in the header does not match a destination identifier comprised in  
the primary entry, wherein  
the notification identifies the unicast destination address as corresponding to  
the destination identifier comprised in the primary entry.
18. The method of claim 16, wherein  
the packet is only sent from the interface if the interface is not comprised in an uplink  
interface bundle.
19. The method of claim 13, further comprising:  
receiving a second packet, the second packet comprising a multicast destination  
address; and  
sending at most one copy of the second packet to a virtual network device sub-unit via  
a virtual network device link, the virtual network device sub-unit comprised in  
a virtual network device.

20. The method of claim 19, further comprising:  
receiving a third packet via the virtual network device link, the third packet  
comprising a second multicast destination address; and  
replicating the third packet for each of a plurality of outgoing VLANs (Virtual Local  
Area Networks) associated with the second multicast destination address.
21. The method of claim 20, further comprising:  
sending at least one copy of the third packet to each line card that includes an  
interface associated with one of the outgoing VLANs.
22. The method of claim 20, further comprising:  
sending at least one copy of the third packet to each line card that includes an  
interface associated with an incoming VLAN, wherein  
the third packet is being conveyed in the incoming VLAN.
23. The method of claim 20, further comprising:  
sending at most one copy of the third packet to each line card that includes an  
interface associated with one of the outgoing VLANs.
24. A method comprising:  
receiving a packet via a virtual network device link;  
performing one of an ingress lookup and an egress lookup for the packet, wherein  
the ingress lookup is performed for the packet if the packet includes a  
multicast destination address; and  
the egress lookup is performed for the packet if the packet includes a unicast  
destination address.
25. The method of claim 24, wherein  
the packet includes a multicast destination address, and  
the method further comprises:  
replicating the packet for each of a plurality of outgoing VLANs associated  
with the multicast destination address.

26. The method of claim 25, further comprising:  
sending at least one copy of the packet to each line card that includes an interface associated with one of the outgoing VLANs.
27. The method of claim 25, further comprising:  
sending at most one copy of the packet to each line card that includes an interface associated with one of the outgoing VLANs.
28. The method of claim 25, further comprising:  
not sending any copy of the packet via the virtual network device link.
29. The method of claim 25, further comprising:  
not sending any copy of the packet via an uplink interface comprised in a uplink interface bundle.
30. The method of claim 24, wherein  
a header associated with the packet is also received via the virtual network device link,  
the header comprises a destination identifier, and  
the packet comprises the unicast destination address, and  
the method further comprises:  
sending the packet and the header to another line card if a non-primary entry corresponding to the unicast destination address is found during the egress lookup.
31. The method of claim 30, further comprising:  
if a primary entry corresponding to the unicast destination address is found during the egress lookup:  
sending the packet from an interface identified by the primary entry.
32. The method of claim 30, further comprising:  
sending a notification via the virtual network device link if a destination identifier comprised in the header does not match a destination identifier comprised in the primary entry, wherein

the notification identifies the unicast destination address as corresponding to the destination identifier comprised in the primary entry.

33. The method of claim 30, wherein  
the packet is only sent from the interface if the interface is not comprised in a uplink interface bundle.

34. A system comprising:  
an interface to a virtual network device link, wherein  
the interface is configured to receive a packet; and  
a distributed forwarding module coupled to the interface, wherein  
the distributed forwarding module is configured to forward the packet.

35. The system of claim 34, wherein  
the distributed forwarding module is configured to perform an ingress lookup for the packet if the packet includes a multicast destination address; and  
the distributed forwarding module is configured to perform an egress lookup for the packet if the packet includes a unicast destination address.

36. The system of claim 34, wherein  
the packet includes a multicast destination address, and  
the distributed forwarding module is configured to replicate the packet for each of a plurality of outgoing VLANs associated with the multicast destination address.

37. The system of claim 35, further comprising:  
one or more line cards, wherein  
the distributed forwarding module is configured to send at least one copy of the packet to each of the one or more line cards that includes an interface associated with one of the outgoing VLANs.

38. The system of claim 35, further comprising:  
one or more line cards, wherein

the distributed forwarding module is configured to send at most one copy of the packet to each line card that includes an interface associated with one of the outgoing VLANs.

39. The system of claim 35, further comprising:
  - a second interface configured to receive a second packet, wherein
    - the second packet comprises a second multicast address, and
    - the distributed forwarding module is configured to send at most one copy of the second packet via the virtual network device link.
40. The system of claim 34, wherein
  - a header associated with the packet is also received via the virtual network device link,
  - the header comprises a destination identifier, and
  - the packet comprises the unicast destination address, and
  - the distributed forwarding module is configured to send the packet and the header to another line card if a non-primary entry corresponding to the unicast destination address is found during the egress lookup.
41. The system of claim 40, further comprising:
  - a second interface, wherein
    - the distributed forwarding module is configured to send the packet from the second interface if a primary entry corresponding to the unicast destination address is found during the egress lookup and if the primary entry identifies the second interface.
42. The system of claim 40, wherein
  - the distributed forwarding module is configured to send a notification via the virtual network device link if a destination identifier comprised in the header does not match a destination identifier comprised in the primary entry, and
  - the notification identifies the unicast destination address as corresponding to the destination identifier comprised in the primary entry.

43. A system comprising:

means for receiving a packet, the packet comprising a multicast destination address;  
and

means for sending a copy of the packet to a virtual network device sub-unit via a  
virtual network device link.

44. The system of claim 43, wherein sending the copy of the packet to the virtual  
network device sub-unit comprises:

sending at most one copy of the packet via the virtual network device link.

45. The system of claim 44, further comprising:

means for receiving a second packet via the virtual network device link, the second  
packet comprising a second multicast destination address; and

means for replicating the second packet for each of a plurality of outgoing VLANs  
(Virtual Local Area Networks) associated with the second multicast  
destination address.

46. The system of claim 45, further comprising:

means for sending at least one copy of the second packet to each line card that  
includes an interface associated with one of the outgoing VLANs.

47. The system of claim 45, further comprising:

means for sending at least one copy of the second packet to each line card that  
includes an interface associated with an incoming VLAN, wherein  
the second packet is being conveyed in the incoming VLAN.

48. The system of claim 45, further comprising:

means for sending at most one copy of the second packet to each line card that  
includes an interface associated with one of the outgoing VLANs.

49. The system of claim 44, further comprising:

means for receiving a third packet via the virtual network device link, the third packet  
comprising a unicast destination address; and

means for performing an egress lookup for the third packet in response to the receiving the third packet.

50. A system comprising:

means for receiving a packet via a virtual network device link, the packet comprising a unicast destination address; and

means for performing an egress lookup for the packet.

51. The system of claim 50, wherein

a header associated with the packet is also received via the virtual network device link,

the header comprises a destination identifier obtained by performing an ingress lookup for the packet.

52. The system of claim 51, further comprising:

means for sending the packet and the header to another line card if a non-primary entry corresponding to the unicast destination address is found during the egress lookup.

53. The system of claim 51, further comprising:

means for sending the packet from an interface identified by a primary entry, if the primary entry corresponding to the unicast destination address is found during the egress lookup.

54. The system of claim 53, further comprising:

means for sending a notification via the virtual network device link if the destination identifier comprised in the header does not match a destination identifier comprised in the primary entry, wherein  
the notification identifies the unicast destination address as corresponding to  
the destination identifier comprised in the primary entry.

55. The system of claim 53, wherein

the packet is only sent from the interface if the interface is not comprised in an uplink interface bundle.

56. The system of claim 51, further comprising:  
means for receiving a second packet, the second packet comprising a multicast  
destination address; and  
means for sending at most one copy of the second packet to a virtual network device  
sub-unit via a virtual network device link, the virtual network device sub-unit  
comprised in a virtual network device.

57. A computer readable medium comprising program instructions executable to:  
detect reception of a packet, the packet comprising a multicast destination address;  
and  
send a copy of the packet to a virtual network device sub-unit via a virtual network  
device link.

58. The computer readable medium of claim 57, wherein sending the copy of the  
packet to the virtual network device sub-unit comprises:  
sending at most one copy of the packet via the virtual network device link.

59. The computer readable medium of claim 58, wherein the program instructions  
are further executable to:  
detect reception of a second packet via the virtual network device link, the second  
packet comprising a second multicast destination address; and  
replicate the second packet for each of a plurality of outgoing VLANs (Virtual Local  
Area Networks) associated with the second multicast destination address.

60. The computer readable medium of claim 59, wherein the program instructions  
are further executable to:  
send at least one copy of the second packet to each line card that includes an interface  
associated with one of the outgoing VLANs.

61. The computer readable medium of claim 59, wherein the program instructions  
are further executable to:  
send at least one copy of the second packet to each line card that includes an interface  
associated with an incoming VLAN, wherein  
the second packet is being conveyed in the incoming VLAN.

62. The computer readable medium of claim 59, wherein the program instructions are further executable to:

send at most one copy of the second packet to each line card that includes an interface associated with one of the outgoing VLANs.

63. The computer readable medium of claim 58, wherein the program instructions are further executable to:

detect reception of a third packet via the virtual network device link, the third packet comprising a unicast destination address; and  
perform an egress lookup for the third packet in response to the receiving the third packet.

64. A computer readable medium comprising program instructions executable to:  
detect reception of a packet via a virtual network device link, the packet comprising a unicast destination address; and  
perform an egress lookup for the packet.

65. The computer readable medium of claim 64, wherein  
a header associated with the packet is also received via the virtual network device link,  
the header comprises a destination identifier.

66. The computer readable medium of claim 65, wherein the program instructions are further executable to:

send the packet and the header to another line card if a non-primary entry corresponding to the unicast destination address is found during the egress lookup.

67. The computer readable medium of claim 65, wherein the program instructions are further executable to:

send the packet from an interface identified by a primary entry, if the primary entry corresponding to the unicast destination address is found during the egress lookup.

68. The computer readable medium of claim 67, wherein the program instructions are further executable to:

send a notification via the virtual network device link if the destination identifier comprised in the header does not match a destination identifier comprised in the primary entry, wherein  
the notification identifies the unicast destination address as corresponding to the destination identifier comprised in the primary entry.

69. The computer readable medium of claim 67, wherein the packet is only sent from the interface if the interface is not comprised in an uplink interface bundle.

70. The computer readable medium of claim 65, wherein the program instructions are further executable to:

detect reception of a second packet, the second packet comprising a multicast destination address; and  
send at most one copy of the second packet to a virtual network device sub-unit via a virtual network device link, the virtual network device sub-unit comprised in a virtual network device.